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AMENDMENTS TO THE CLAIMS

The following claim listing includes the present status of all claims submitted in this application, including amendments submitted with this paper. All claims canceled or withdrawn have been canceled or withdrawn without prejudice. Applicants reserve the right to pursue any such claims in divisional or continuing applications. By this paper, claim 1 has been amended.

LISTING OF CLAIMS

1(currently amended). An extrusion die for use in producing perforated stick-type propellant comprising:

(a) a die blank having an inner wall defining a generally round central passage therethrough, said passage having an unrestricted tapered entry;

(b) an open lattice webbing structure beyond said tapered entry in and along said central passage for passing extruding propellant, said webbing structure including a center and a series of radial struts connecting the center with said inner wall of said die thereby spanning said central die passage; ~~and~~

(c) an array of solid die pins attached to and carried by said struts of said webbing structure arranged in one or more generally regular ~~circular~~ patterns for imparting a pattern of perforations in material forced through said central passage, each pin having a fixed

end fixed to said lattice webbing structure and a free end extending parallel to said passage and beyond said webbing structure; and

(d) wherein said unrestricted tapered entry and said open lattice webbing structure are such that propellant is introduced directly into spaces between all pins by propellant flow generally parallel to said pins.

2(previously presented). An extrusion die as in claim 1 wherein said die is formed as a unitary structure from a single die blank.

3(previously presented). An extrusion die as in claim 1 wherein said central passage is tapered slightly in the vicinity of said lattice webbing structure.

4(previously presented). An extrusion die as in claim 1 wherein said open lattice structure is machined in said central passage.

5(previously presented). An extrusion die as in claim 2 wherein said open lattice structure is machined in said central passage.

6(previously presented). An extrusion die as in claim 1 wherein at least some of the pins are formed integrally with said open lattice webbing structure.

7(previously presented). An extrusion die as in claim 4 wherein at least some of the pins are formed integrally with said open lattice webbing structure.

8(withdrawn). An extrusion die as in claim 1 wherein one or more of said pins is separately manufactured and fixed to said lattice webbing structure.

9(withdrawn). An extrusion die as in claim 8 wherein separately manufactured pins are press fit into openings provided in said lattice webbing structure.

10(previously presented). An extrusion die as in claim 1 wherein one or more of said pins is of a non-round cross section.

11(withdrawn). An extrusion die as in claim 1 wherein the number of pins arranged in said pattern is selected from 7, 19 and 37 and wherein said pattern includes a central pin.

12(withdrawn). An extrusion die as in claim 11 wherein the number of pins is 7.

13(previously presented). An extrusion die as in claim 4 wherein said machining includes electron discharge machining.

14(previously presented). An extrusion die as in claim 5 wherein said machining includes electron discharge machining.

15(previously presented). An extrusion die as in claim 1 wherein the area of the open lattice webbing structure is tapered slightly to enhance reforming of extruded material into sticks.

16(withdrawn). A method of extruding perforated stick-type propellant including the step of:

extruding propellant through the die blank of claim 1, said propellant passing through said die blank maintaining a direction substantially parallel to said pins along the length thereof.